

Our lives begin to end the day we
become silent about things that matter.

Martin Luther King, Jr.

There is no point to intellectual and
political work if one were a pessimist.
Intellectual and political work require, nay,
demand optimism.

Edward Said

Durable living: Preparing for climate change and energy decline

Global climate change

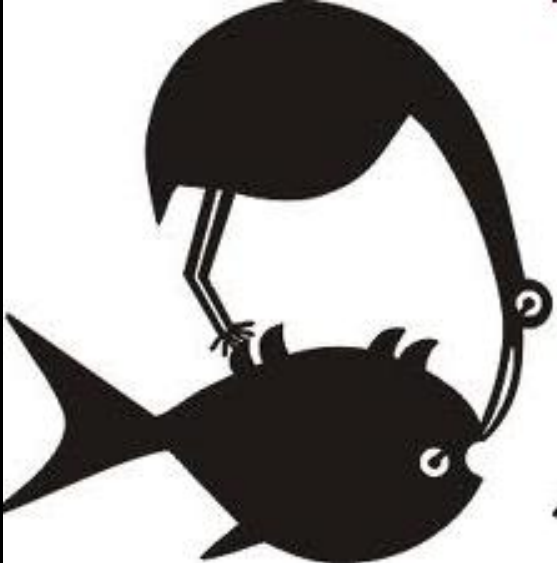
Energy decline (and economic impacts)

Durable living arrangements

Water

Food

Regional history



Mimbres collapse ~860 ybp

Overshoot in human carrying capacity

Enabled by cheap energy source



Climate chaos

Intergovernmental Panel on Climate Change

late 2007: *1 C by 2100*

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November 2009: *6 C, 7 C by 2100*

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UK Meteorology Office (Gornall et al. *Phil. Trans. R. Soc. B* 365: 2973-2989)

September 2010: *Agriculture significantly impacted by 2020*

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Climate change is irreversible

(10 February 2009)

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Climatic Change: Only economic collapse will prevent
runaway global climate change
(21 November 2009)

Climate chaos, locally

Southwestern United States is entering permanent Dust Bowl, with increased drying beginning immediately

(Richard Seager, unpublished data, August 2010)

Climate chaos trumped by economic collapse?

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Energy decline: Economic scenarios

This Time is Different

by Carmen Reinhart and Kenneth Rogoff (2009)

> 250 financial crises
66 countries
800 years

Energy decline: Economic scenarios

Société Générale

(November 2009)

Prepare for global economic collapse within two years

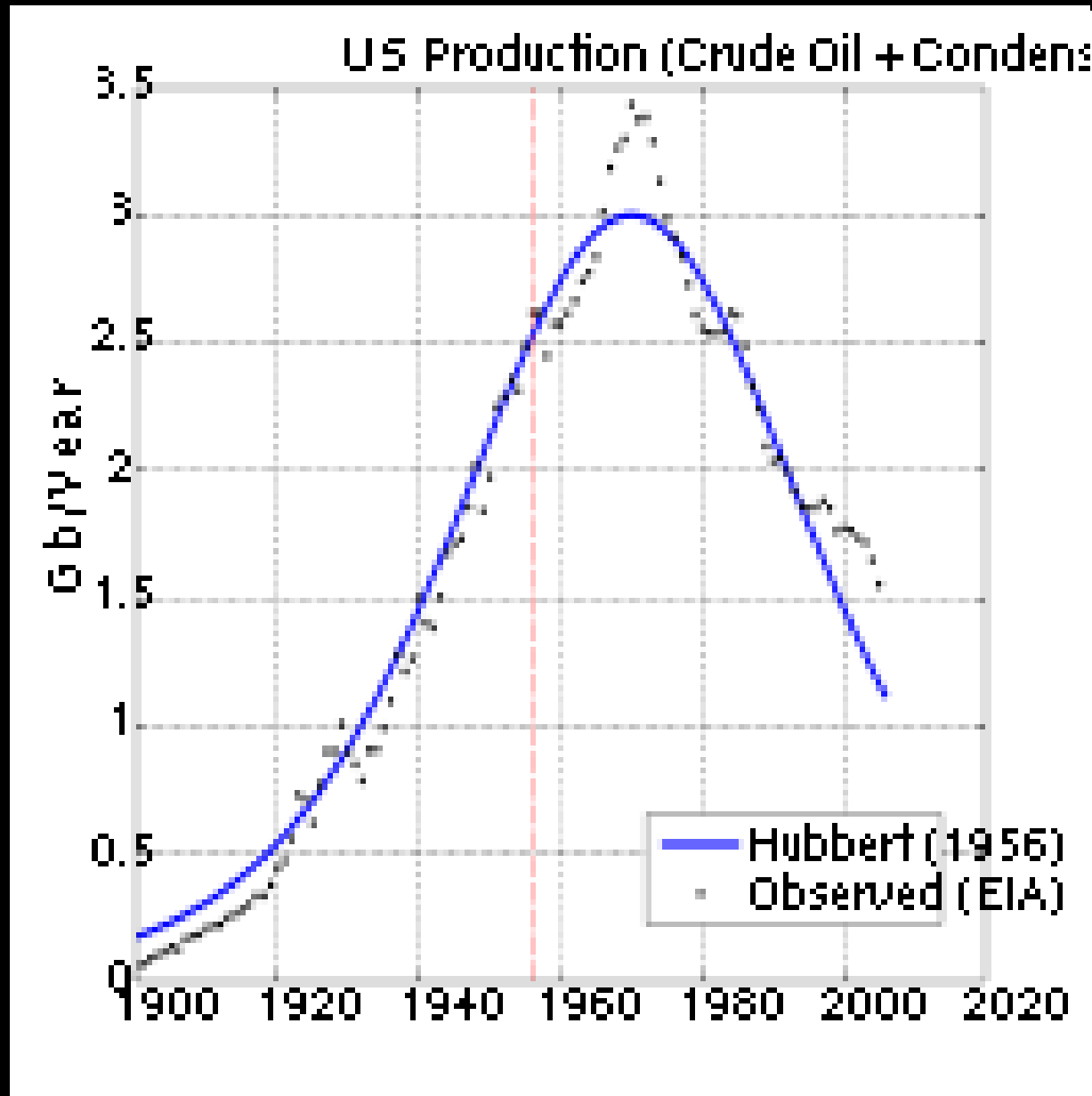
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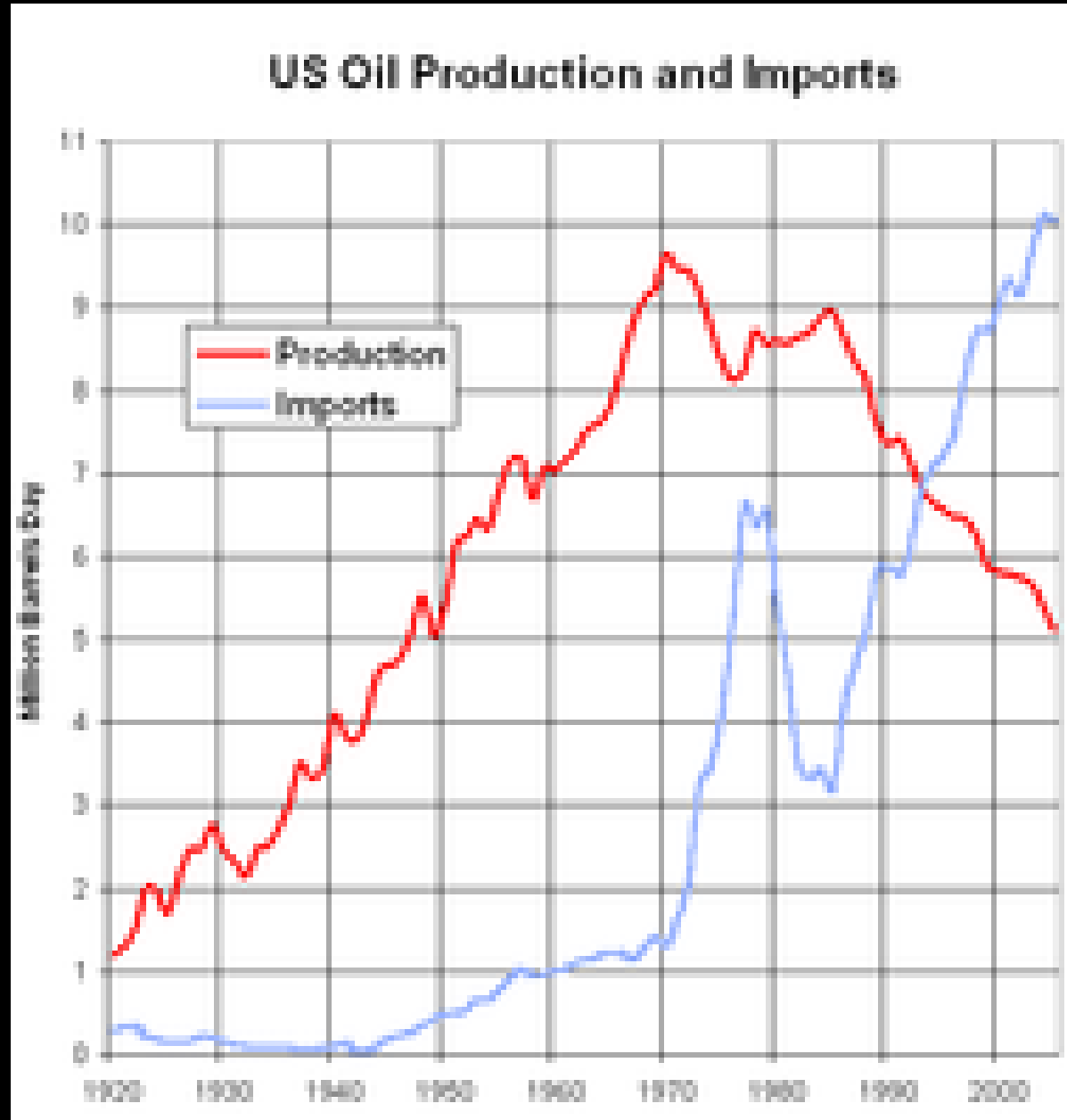
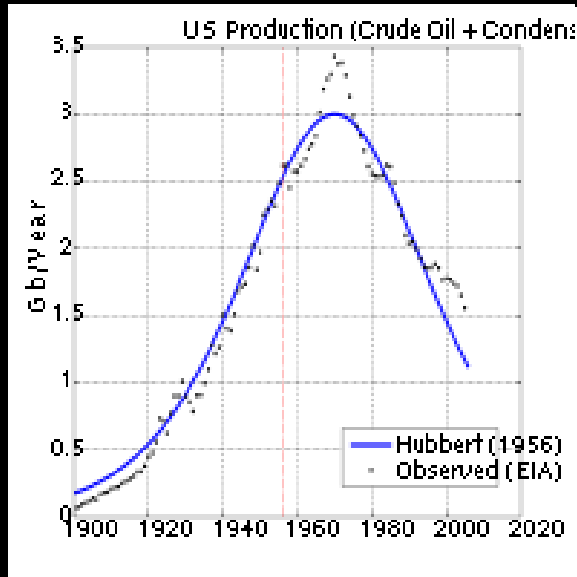
Prepare for global economic collapse by November 2011

Niall Ferguson, Michael Ruppert, Rice Farmer, Kurt Cobb, Karl Denninger, Rob Viglione, Bill Bonner, Gerald Celente, Jeff Rubin, John Michael Greer, Matt Savinar, CNBC, Catherine Austin Fitts, Charles Munger, Gonzalo Lira, Joe Bageant, Dave Cohen, Jan Lundberg, Matt Simmons (recently deceased), Chris Hedges, Dmitry Orlov, Michael Snyder, Nicole Foss, Paul Craig Roberts, Marc Faber, Bill Bonner, James Wesley Rawles, Tony Robbins, Nouriel Roubini, Max Keiser, Tyler Durden, Chris Martenson, James Kwak, Simon Johnson, Chris Clugston, Kenneth Deffeyes, Samsam Bakhtiari, James Howard Kunstler, Bob Chapman, George Ure, Igor Panarin, Joseph Meyer, Harry Dent, John Williams, Richard Russell, Niño Becerra, Martin D. Weiss, Eric deCarbonnel, Robin Landry, John P. Hussman, Robert Prechter, Richard Moge, Peter Schiff, Lindsey Williams, Hugh Hendry, Arthur Laffer

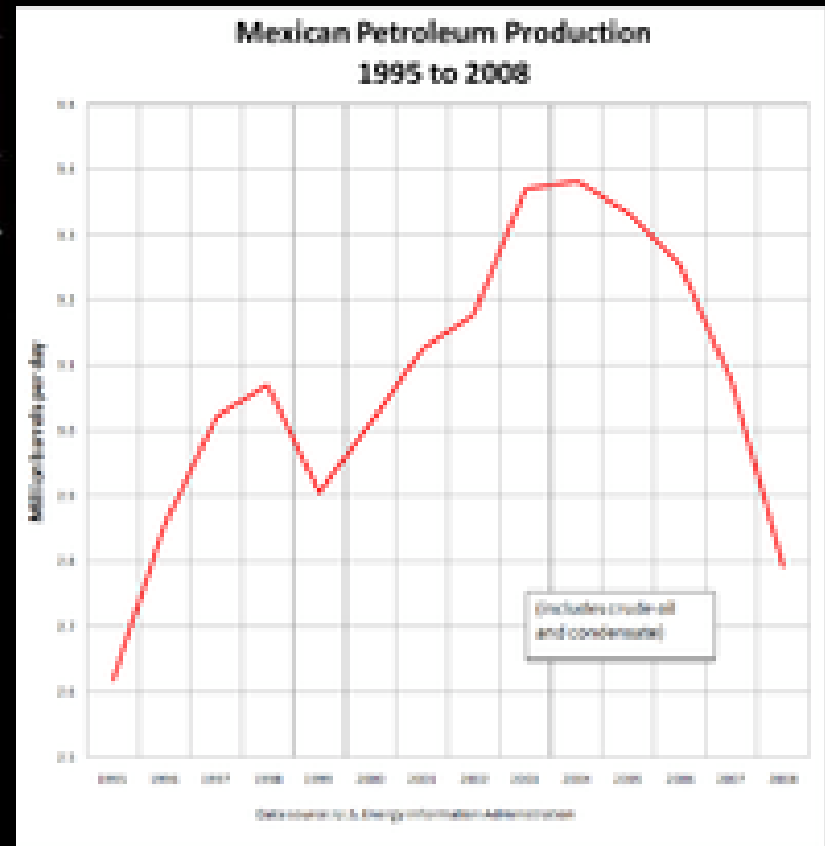
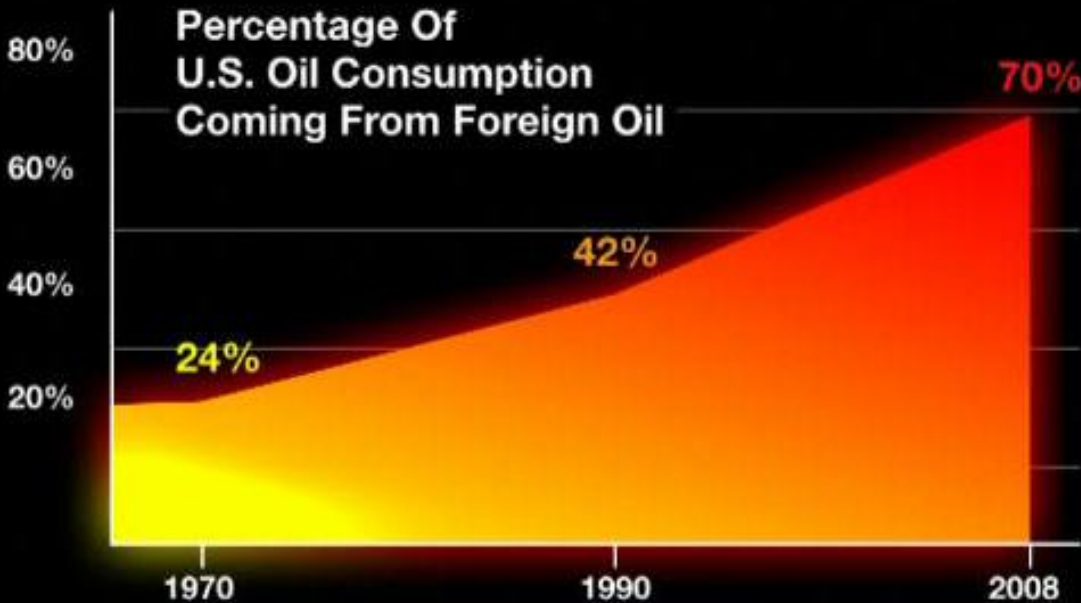
Energy decline: United States



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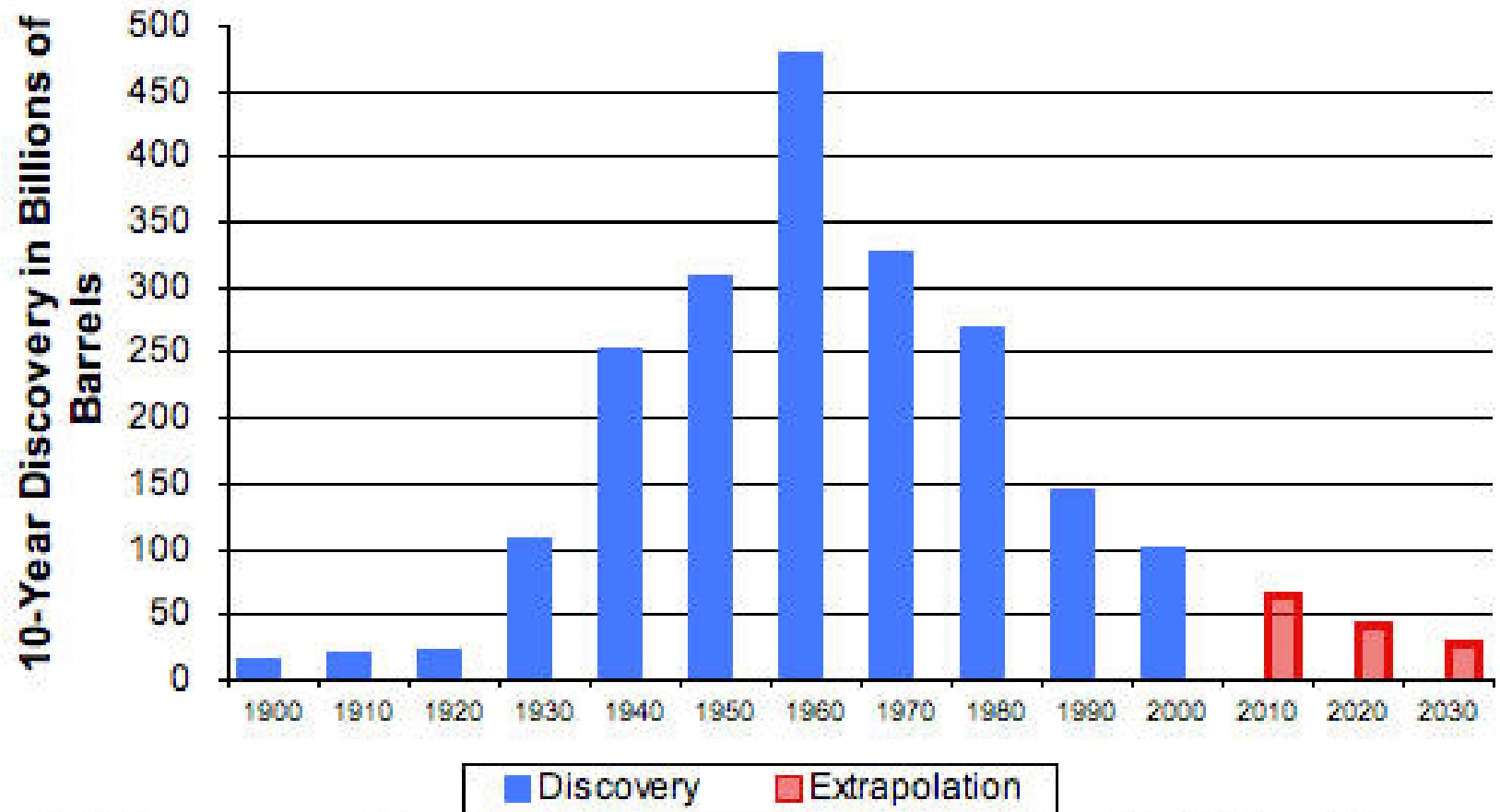


Energy decline: United States imports



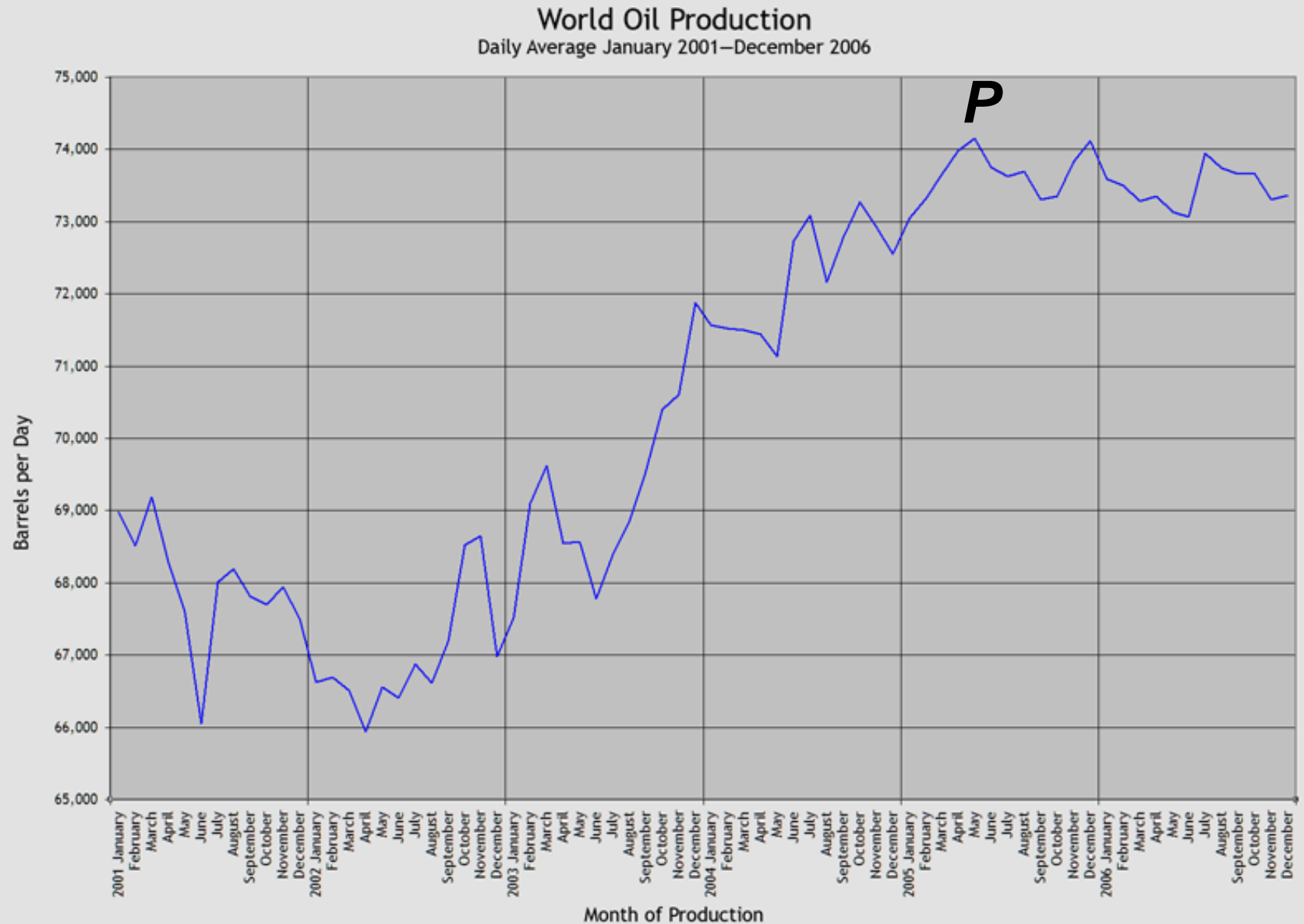
Energy decline: World

Oil discoveries have been declining since 1964



Note: World oil discovery over 10-year periods, by Association for the Study of Peak Oil and Gas.

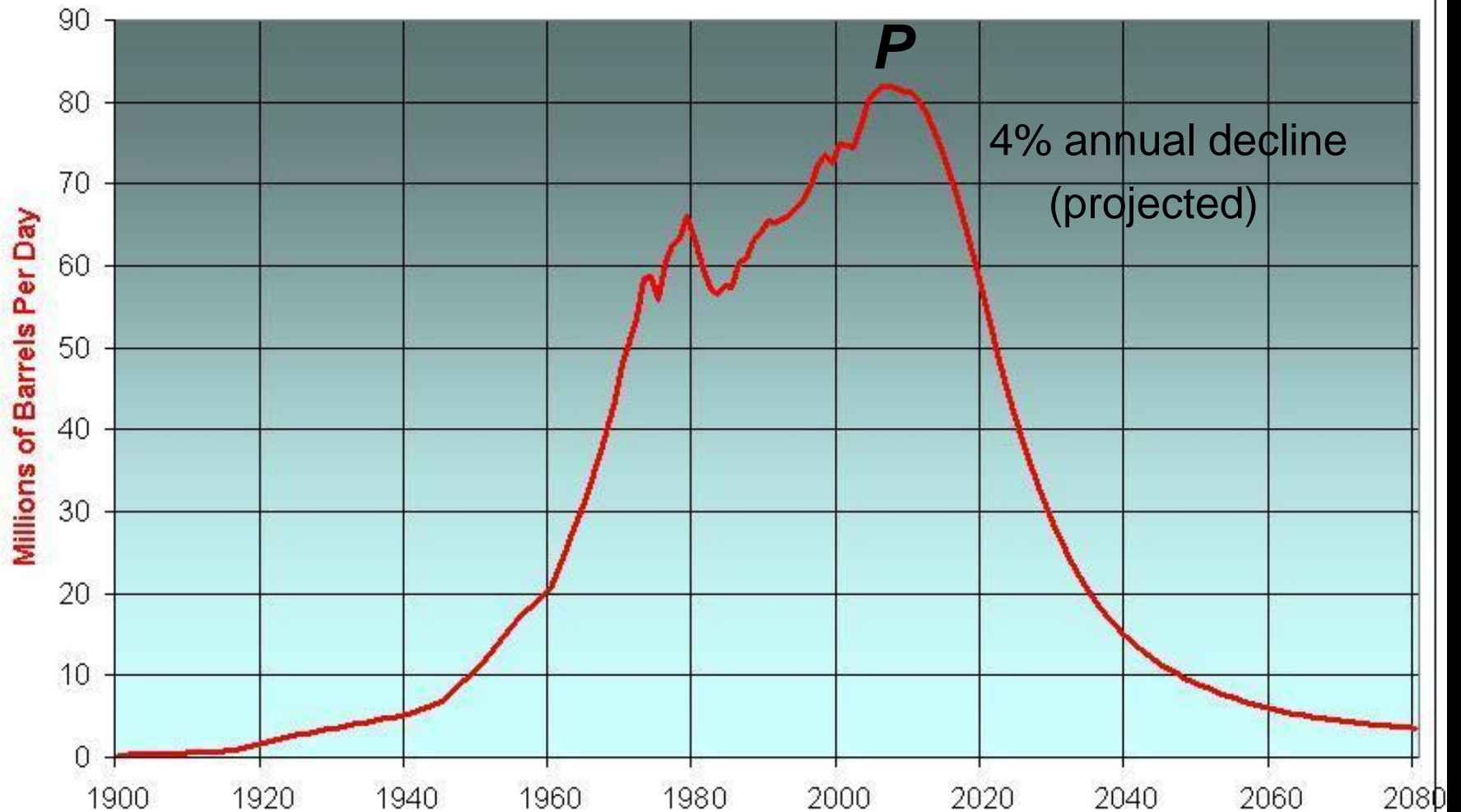
Energy decline: World



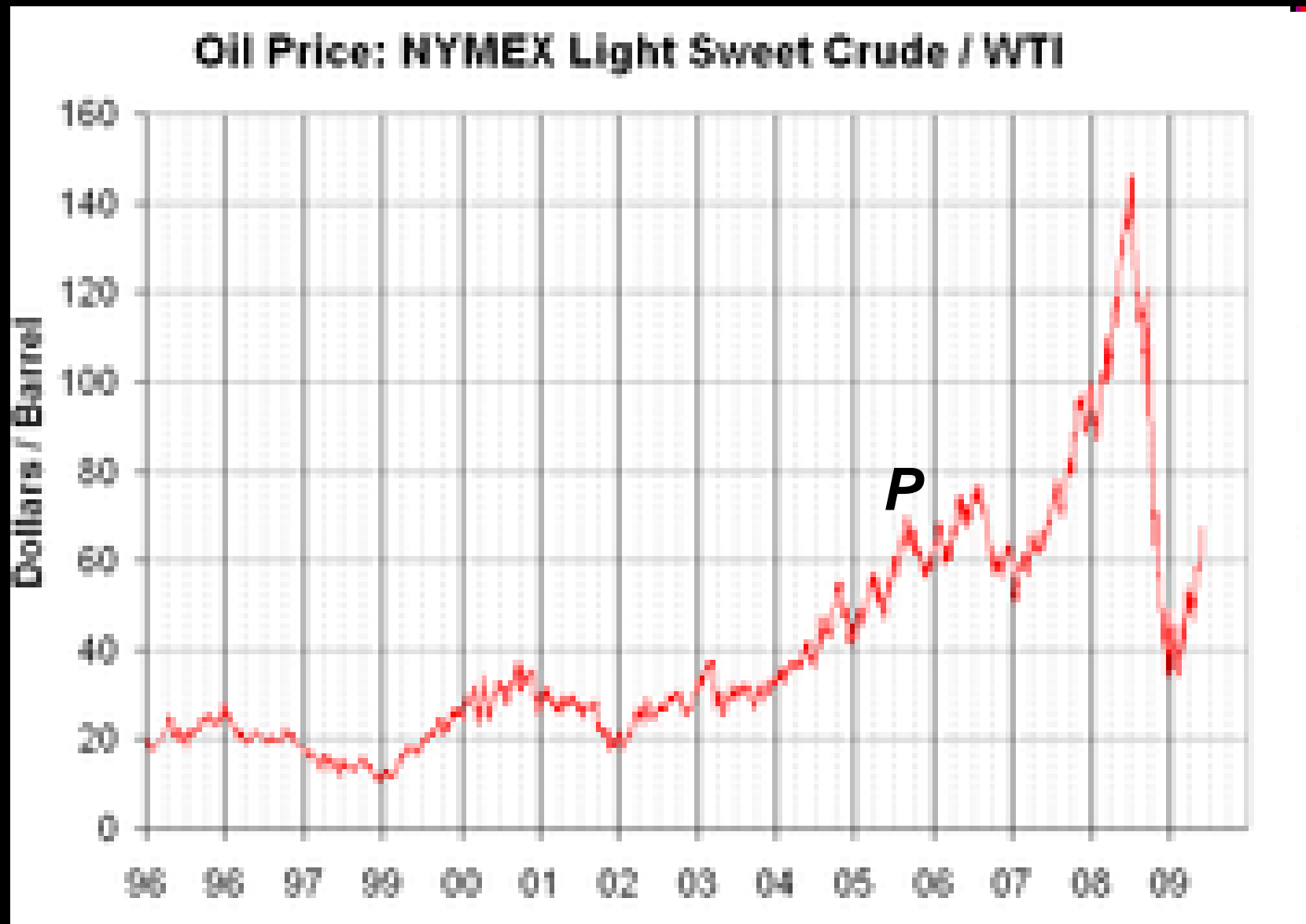
Data taken from The US Energy Information Agency report of April 5, 2007.
This chart compiled April 14, 2007 by www.princeton.edu/hubbert/.

Energy decline: World

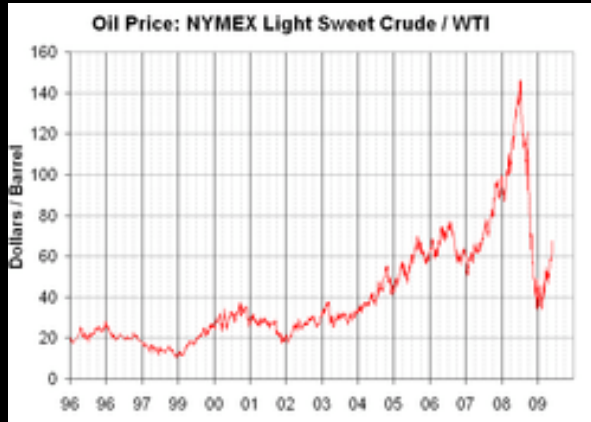
World Oil Production 1900-2080



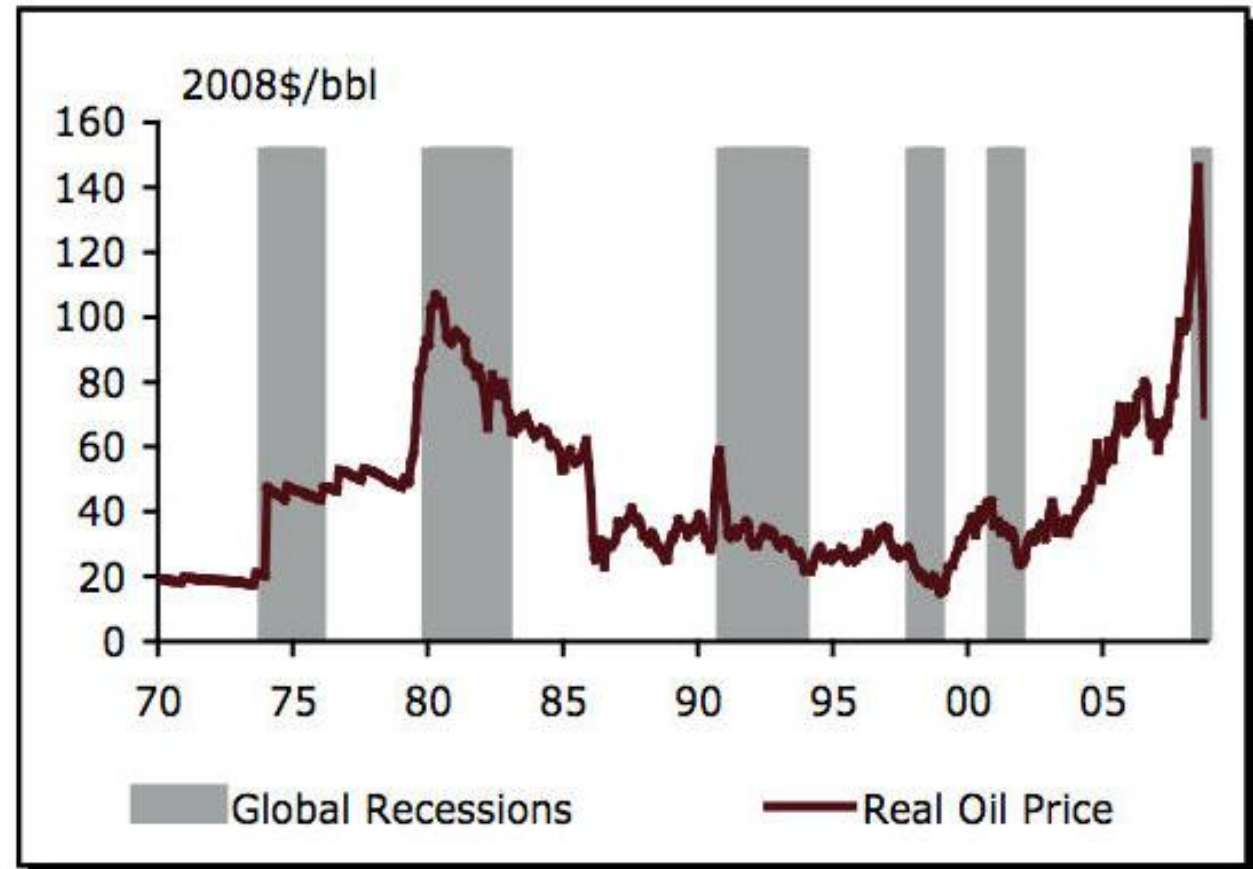
Energy decline: World



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Past Recessions and Oil Spikes



Energy decline: Future scenarios

International Energy Agency

Projects 9.1% annual decline, based on assessment
of world's largest oil fields (*WEO 2008*)
(~3% through June 2010)

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Jeff Rubin's forecasting record

2000: predicted \$50/bbl in 2005 (actual = \$70.85)

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Jeff Rubin's forecasting record and forecast

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October 2009: predicted \$225/bbl by 2012

Energy decline: Economic scenarios

Joint Operating Environment 2010

(Pentagon, February 2010*)

No spare oil capacity by 2012

Energy decline and economic collapse

Peak oil → Greatest Depression

Massive unemployment (~100%)

Fiat currency worth less and less

Energy decline and economic collapse

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Very little gasoline, diesel

Energy decline and economic collapse

Peak oil → Greatest Depression

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No food in the grocery stores

No fossil fuels for A/C or heat

No water from municipal taps

Energy decline and economic collapse

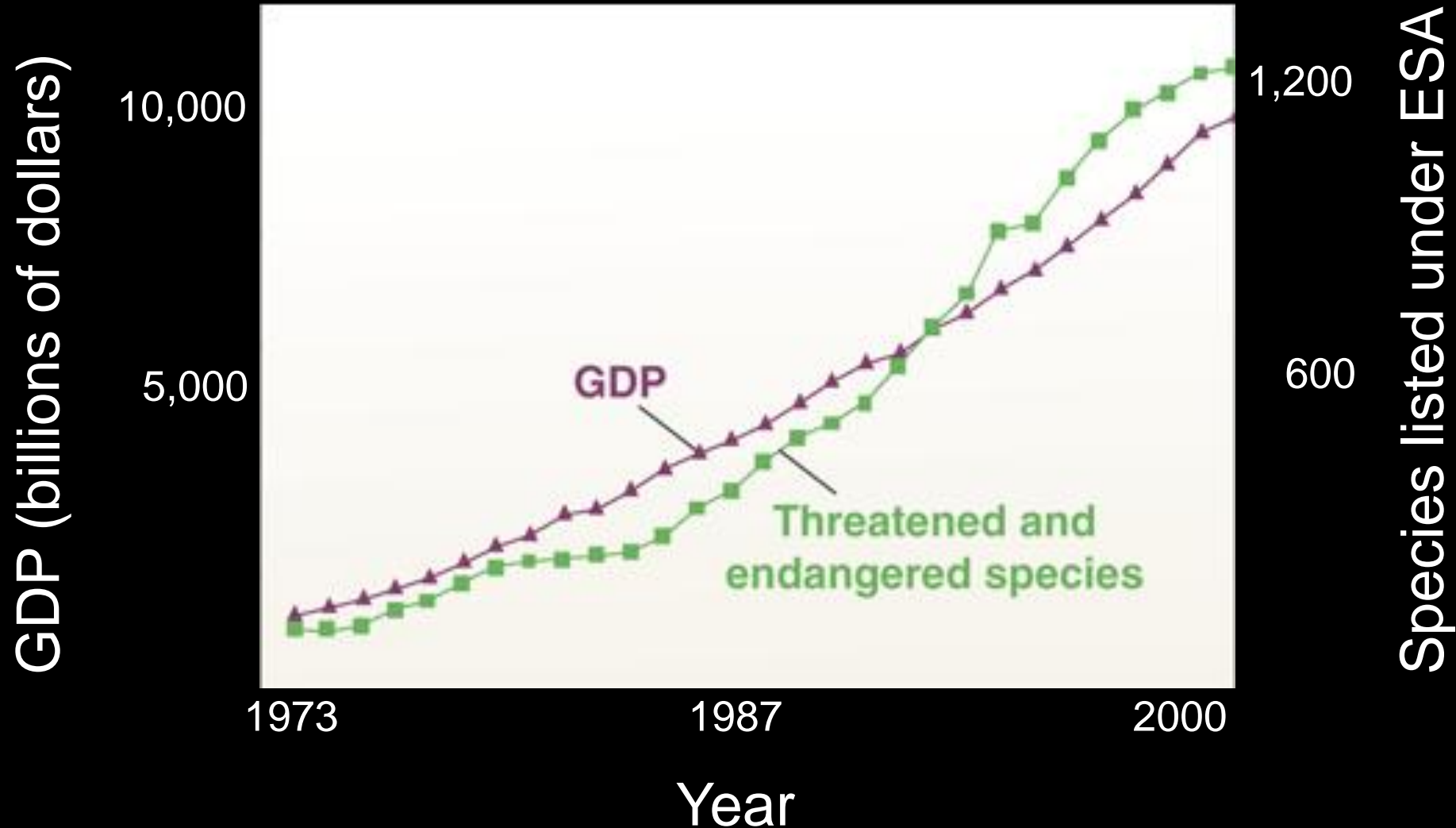
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NO WESTERN CIVILIZATION

Energy decline → economic collapse: good news



Durable living

Recognize that the industrial economy is a subset of the environment



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Soils
Water
Fossil fuels



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Soils

Water

Fossil fuels

Rely on local human community for support

The antithesis of durable living



Consume

1. To do away with completely; destroy
- 2a. To spend wastefully; squander
- 2b. Use up
3. To waste or burn away; perish

The antithesis of durable living



Obedience



Oppression



Durable living: a personal example

The trouble is that once you see it, you can't unsee it. And once you've seen it, keeping quiet, saying nothing, becomes as political an act as speaking out. There's no innocence. Either way, you're accountable.

Arundhati Roy (*Power Politics*, 2001)

Durable living: a personal example

You can either take action, or you can hang back and hope for a miracle.

Miracles are great, but they are so unpredictable.

Peter Drucker

Durable living: important attributes

Water extraction and delivery
Food production and delivery
Maintain body temperature
Rebuild human communities



Durable living: important attributes

Thriving in the post-carbon era

Water security

Food security

Maintain body temperature

Human community



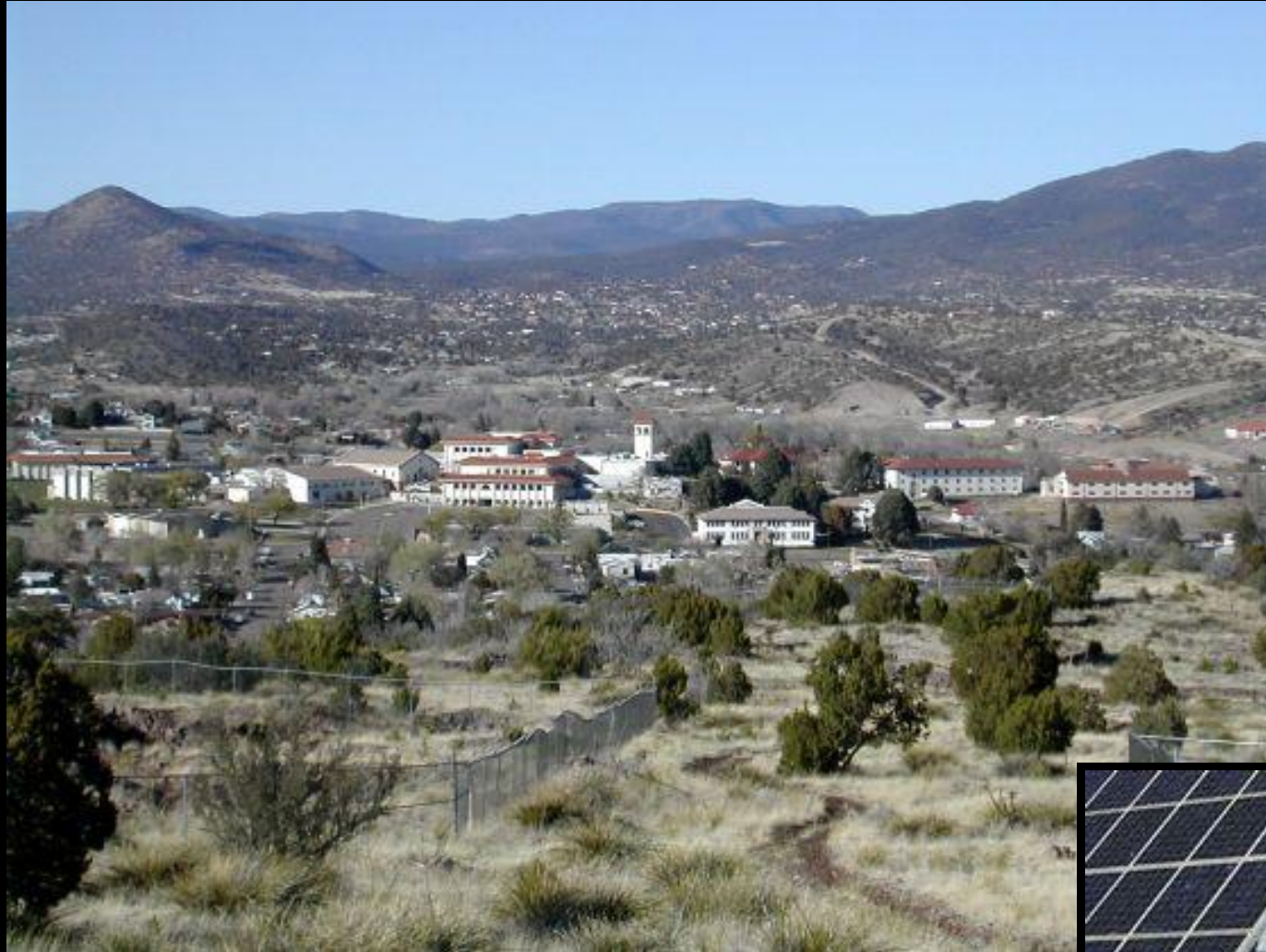
Durable living: Water



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Durable living: Water



Silver City: >850 million gallons/year



Durable living: Food



Durable living: Food

Population of Silver City >10,000

Population of Grant County >30,000

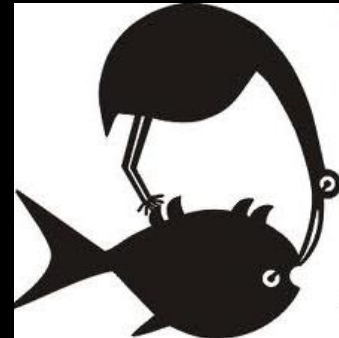
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VICTORY GARDENS?

Durable living: Failure of leadership



Durable living: Failure of leadership



